

$y = 25.628e^{0.0879x}$
 $R^2 = 0.9519$

Figure 1. Plasticizer Concentration vs. OTR @ 1.0 mil

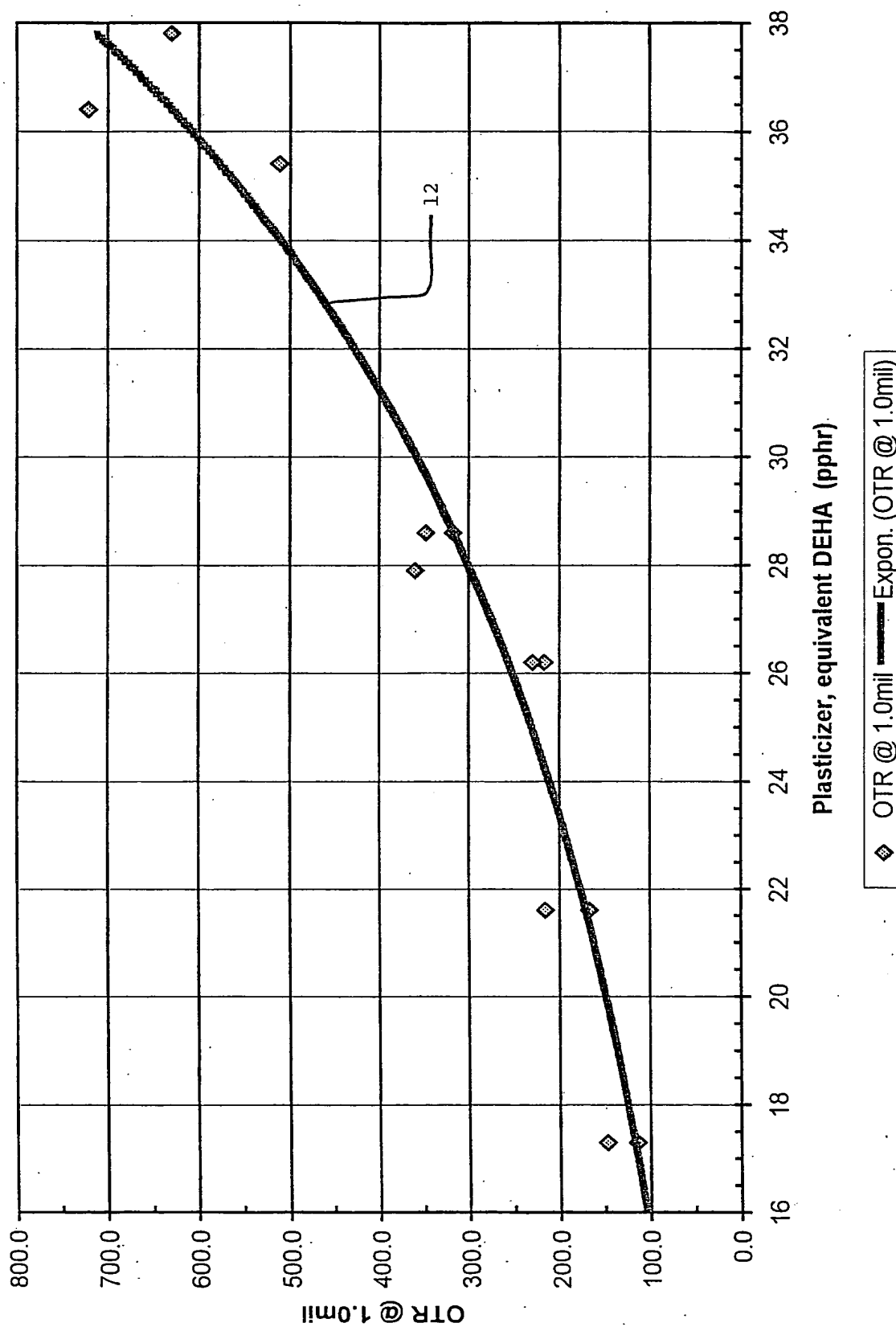


Figure 2. OTR @ 1.0mil vs. Plasticizer Concentration: Oriented and Nonoriented Film

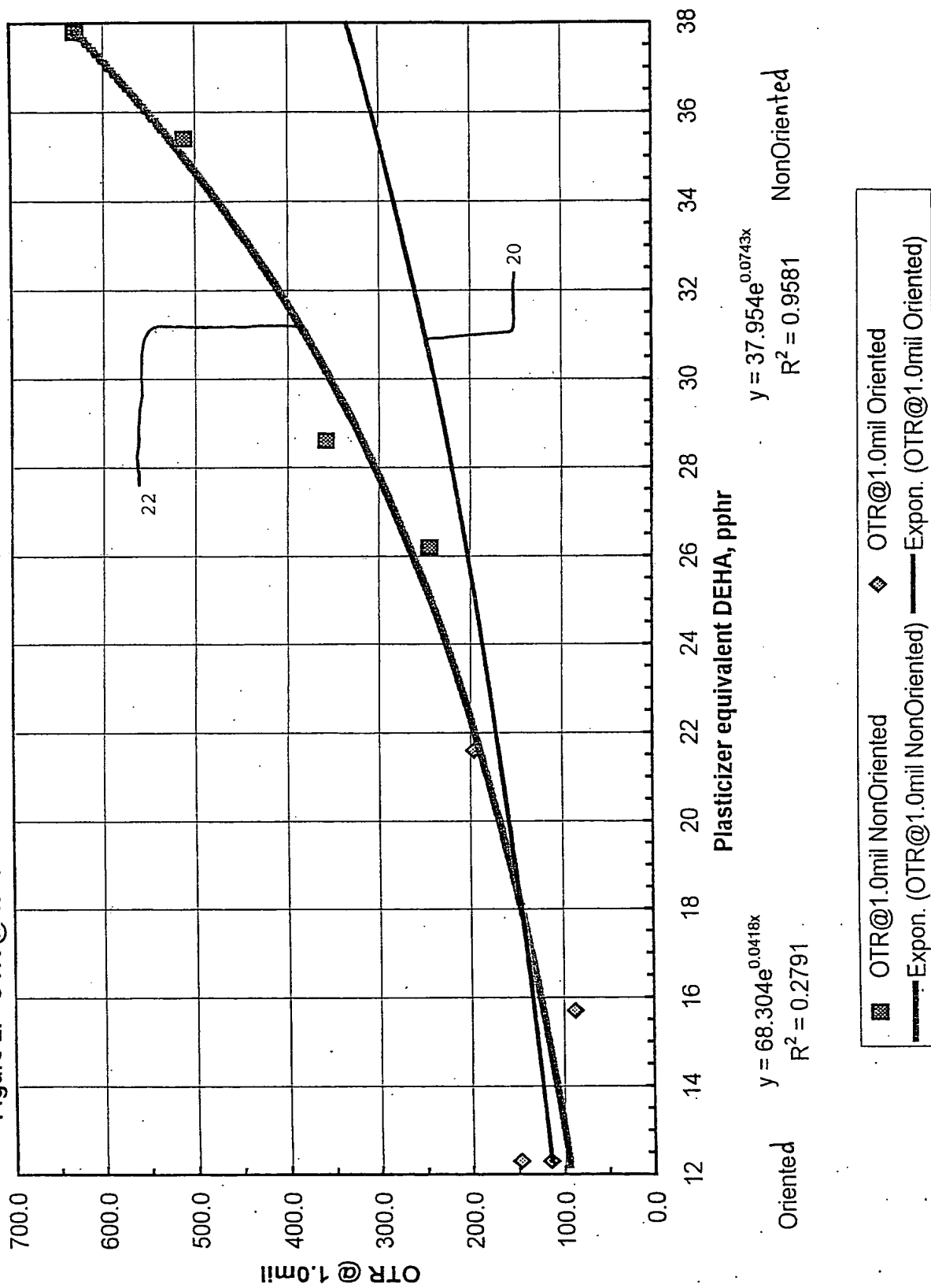


Figure 3. Basefilm Properties

Pliant Corp. Number	Nominal Gauge (mils)	Slip	Anti Block	Anti Fog	Surface Active Agents (pphr)	Plasticizers total (pphr)	Plasticizers equivalent DEHA (pphr)	OTR @ 1 mil	OTR	Sample Gauge (mils)	Molecular Orientation (shrink)
Vitaflm CBIX	0.96	yes	yes	yes	3.4	22	15.7	85.4	93.2	0.917	Oriented
Vitaflm CBIX	1.00	yes	yes	yes	3.4	22	15.7	88.2	84.5	1.044	Oriented
Vitaflm BIX XT	0.49	yes	yes	yes	3.1	24	17.3	114.6	211	0.543	Oriented
Vitaflm BIX 44XT	0.49	yes	yes	yes	3.1	24	17.3	147.9	241.3	0.613	Oriented
Vitaflm FTX	0.50	no	no	yes	1.7	29	21.6	167.1	320.2	0.522	Oriented
Vitaflm FTX	0.75	no	no	yes	1.7	29	21.6	216.2	264	0.819	Oriented
Omnifilm MX	0.80	yes	no	yes	3.4	40	36.4	721.0	887.9	0.812	Oriented
Vitaflm LGS	0.63	no	no	yes	1.7	32	26.2	217.4	221.7	0.981	NonOriented
Vitaflm LGS	1.00	no	no	yes	1.7	32	26.2	229.9	414.2	0.555	NonOriented
Vitaflm AV7050-1	1.80	yes	yes	yes	2.6	31	27.9	360.0	200.0	1.800	NonOriented
Vitaflm LG clear	1.00	no	no	yes	1.7	33	28.6	348.66	328	1.063	NonOriented
Vitaflm LG (AV7035-1)	1.15	no	no	yes	1.7	33	28.6	318.12	345.2	1.06	NonOriented
Omnifilm (AV7036)	0.45	no	no	yes	3.2	40	35.4	511.5	1100.0	0.465	NonOriented
Vitaflm PS	0.65	no	no	yes	1.7	42	37.8	630.2	959.3	0.657	NonOriented

Notes:

(mils): Gauge: Film Thickness

OTR: Oxygen Transmission Rate: Units: cc/100 square inches/24 hours

(pphr): Plasticizer Level: Units: parts per hundred (PVC) resin

Figure 4. Two-Layer Film Properties

Trial Number	Primary / Secondary Web	Basefilms	Basefilm Nominal Gauge (mils)	2-Ply Laminant Nominal Gauge (mils)	Laminant Sample Gauge (mils)	Laminant Sample OTR	Target OTR @ Laminant Nominal Gauge
A	Primary	Vitaflm CBIX	1.00	1.75	2.00	64.7	61.3
	Secondary	Vitaflm FTX	0.75				
B	Primary	Vitaflm FTX	0.50	0.99	1.14	102.9	119.8
	Secondary	Vitaflm BIX XT	0.49				
C	Primary	Vitaflm FTX	0.50	1.50	1.70	151.3	139.5
	Secondary	Vitaflm LG clear	1.00				
D	Primary	Vitaflm LG clear	1.00	2.00	2.20	75.2	63.6
	Secondary	Vitaflm CBIX	1.00				
E	Primary	Vitaflm LG clear	1.00	2.00	2.00	138.4	135.3
	Secondary	Vitaflm LGS	1.00				
F	Primary	Vitaflm LG clear	1.00	1.63	1.78	156.7	165.0
	Secondary	Vitaflm LGS	0.625				
G	Primary	Vitaflm LG clear	1.00	1.65	1.64	273.9	256.1
	Secondary	Vitaflm PS	0.65				
H	Primary	Vitaflm LG clear	1.00	1.45	1.53	246.6	251.6
	Secondary	Omnifilm (AV7036)	0.45				
I	Primary	Vitaflm CBIX	1.00	1.45	1.71	89.7	67.9
	Secondary	Omnifilm (AV7036)	0.45				
J	Primary	Vitaflm PS	0.65	1.10	1.17	470.6	491.9
	Secondary	Omnifilm (AV7036)	0.45				
K	Primary	Vitaflm LGS	0.625	1.12	1.30	110.3	123.6
	Secondary	Vitaflm BIX XT	0.49				

Notes:

Production Line was Uteco Solventless Laminator.

Both webs Corona treated (one side).

OTR: Oxygen Transmission Rate: units: cc/100 square inches/day

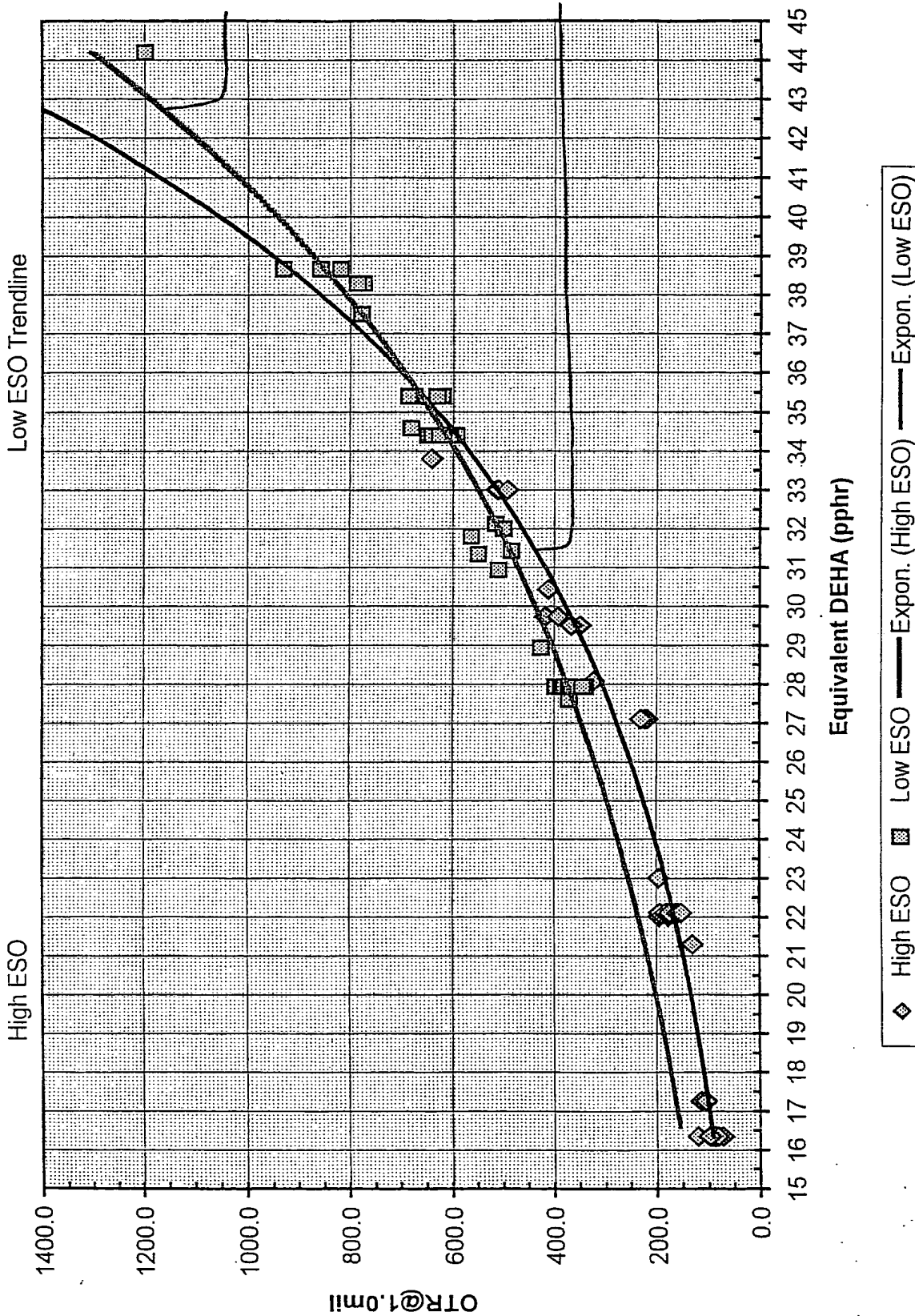
Laminant: Two-ply laminated structure.

$$y = 42.886e^{0.0773x}$$

$$R^2 = 0.9744$$

$$y = 16.981e^{0.1032x}$$

$$R^2 = 0.9577$$



	Vitafilm CBIX	Vitafresh AV7050-1	Vitafilm PS
FUNCTION	pphr	pphr	pphr
PVC resin	100.0	100.0	100.0
Total Plasticizer	22.0	30.9	42.0
Total Process Aid	3.3	2.3	2.5
Total Surface Active Age	3.4	2.6	1.7
TOTAL	128.7	135.8	146.2
OTR @ 1.0 mil	88.2	360.0	630.2

(mils): Gauge: Film Thickness
OTR: Oxygen Transmission Rate: Units: cc/100 square inches/24 hours
(pphr): Plasticizer Level: Units: parts per hundred (PVC) resin